

Remarks/Arguments:

Claims 80, 82-84 and 91-94 are pending. Claims 78, 79 and 86-90 are cancelled.

Claims 80, 83, 91 and 93 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Owa (U.S. Patent No. 5,838,709). Applicants respectfully request reconsideration for the reasons set forth below.

Claim 80 includes features neither disclosed nor suggested by the cited art, namely:

... a semiconductor laser for emitting pumping light ...

... a solid state laser crystal for receiving the pumping light from the fiber and generating a fundamental wave ...

... a bulk type optical wavelength conversion element without an optical waveguide ... having periodic domain inverted structures ...

... the fiber is configured to prevent a variation in temperature of the optical wavelength conversion element caused by a heat generated from the semiconductor laser ... (Emphasis Added)

Owa discloses, in Fig. 16, a semiconductor laser 811 for emitting pumping light to pump solid state laser 813. Light from semiconductor 811 is guided to solid state laser 813 via optical fiber 812 or by a lens (col. 26, lines 49-55). As shown in Fig. 17, solid state laser 813 includes laser medium 932 and non-linear crystals 933-936 for performing wavelength conversion of light from laser medium 932 (col. 27, lines 21-26). Owa further discloses that each laser element is cooled by a cooling mechanism (col. 27, lines 39-42).

Owa does not disclose or suggest Applicants' claimed features of "a bulk type optical wavelength conversion element without an optical waveguide ... having periodic domain inverted structures" or that "the fiber is configured to prevent a variation in temperature of the optical wavelength conversion element caused by heat generated by the semiconductor laser" (emphasis added). These features are neither disclosed nor suggested by Owa.

Owa is silent on a bulk type optical wavelength conversion element without an optical waveguide and having periodic domain inverted structures. On page 2 of the Office Action, the Examiner recites "the optical wavelength conversion element having periodic domain inverted structures (as evidenced in U.S. 5,436,757)." However, U.S. 5,436,757 to Okazaki et al. is a different reference and thus, is not the reference relied upon by the Examiner in the rejection under 35 U.S.C. § 102(e). Applicants respectfully note that to anticipate a claim, the reference must teach every element of the claim. See MPEP § 2131. Owa is silent regarding a bulk type optical wavelength conversion element having periodic domain inverted structures and thus, does not include all of the features of claim 80.

In addition, Owa is silent on a fiber that is configured to prevent a variation in temperature of the optical wavelength conversion element caused by heat generated from the semiconductor laser. Instead, Owa discloses that a lens may be used instead of optical fiber 812 to guide light to solid state laser 813 (col. 26, lines 53-55) and that each laser element is cooled by a cooling mechanism (col. 27, lines 39-42). Because a cooling mechanism is required for each laser element, Owa cannot teach that an optical fiber is configured to prevent a variation in temperature.

In addition, the Examiner asserts, on page 2 of the Office Action, that Owa discloses a fiber configured to prevent a variation in temperature as "as indicated in the instant application on page 55, l. 15-19." Applicants respectfully submit that the Examiner's reliance on the subject specification for the § 102 rejection based on Owa is improper. Applicants respectfully point the Examiner's attention to MPEP § 2131, and, that to anticipate a claim, the reference must teach every element of the claim. Instead, the Examiner has relied upon the feature disclosed in Applicants' own disclosure. Owa is silent on a fiber that is configured to prevent a variation in temperature and, in fact, requires a cooling mechanism. Thus, Owa does not include all of the features of Applicants' claim 80. Accordingly, Applicants respectfully request that the Examiner specifically point out where Owa describes a bulk type optical wavelength conversion element having periodic domain inverted structures and a fiber configured to prevent a variation in temperature of the optical wavelength conversion element or withdraw the rejection. Applicants have found no disclosure of these features in Owa. Accordingly, allowance of claim 80 is respectfully requested.

Claims 83, 91 and 93 include all of the features of claim 80 from which they depend. Accordingly, claims 83, 91 and 93 are also patentable over the cited art.

Claim 82 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Owa in view of Okazaki et al. Claim 82, however, includes all of the features of claim 80 from which it depends. Okazaki et al. do not make up for the deficiencies of Owa. Accordingly, claim 82 is patentable over the cited art for at least the same reasons as claim 80.

Claims 84, 92 and 94 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Owa in view of Covey (U.S. Patent No. 4,919,506). Applicants respectfully request reconsideration for the reasons set forth below.

Claim 84, although not identical to claim 80, includes similar features neither disclosed nor suggested by the cited art. Namely, a bulk type optical wavelength conversion element without an optical waveguide having periodic domain inverted structures and a single mode fiber configured to prevent a variation in temperature of the optical wavelength conversion element.

Owa is described above. Covey discloses coupling of a solid state laser beam into a single-mode optical fiber (col. 1, lines 7-22). Covey does not make up for the features that are lacking in Owa. Namely, a bulk type optical wavelength conversion element without an optical waveguide having periodic domain inverted structures and a single mode fiber configured to prevent a variation in temperature of the optical wavelength conversion element. Accordingly, allowance of claim 84 is respectfully requested.

Claims 92 and 94 including all of the features of claim 84 from which they depend. Accordingly, claims 92 and 94 are also patentable over the cited art.

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In view of the arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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